



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/622,247  | 07/18/2003  | Sheldon C. P. Lim    | CS01-150            | 3131             |
| 30402   | 7590        | 04/12/2007           | EXAMINER            |                  |
| WILLIAM STOFFEL<br>PMB 455<br>1735 MARKET ST. - STE. A<br>PHILADELPHIA, PA 19103-7502 |             |                      | HUYNH, PHUONG       |                  |
|   |             |                      | ART UNIT            | PAPER NUMBER     |
|   |             |                      | 2857                |                  |
| SHORTENED STATUTORY PERIOD OF RESPONSE  | MAIL DATE   | DELIVERY MODE        |                     |                  |
| 3 MONTHS  | 04/12/2007  | PAPER                |                     |                  |

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

|   |                               |                                    |
|---|-------------------------------|------------------------------------|
| <i>Supplemental</i><br><b>Office Action Summary</b> | Application No.<br>10/622,247 | Applicant(s)<br>LIM, SHELDON C. P. |
|   | Examiner<br>Phuong Huynh      | Art Unit<br>2857                   |

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

WHENEVER LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

1)  Responsive to communication(s) filed on 12 October 2006.

2a)  This action is FINAL.                            2b)  This action is non-final.

3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

4)  Claim(s) 1-31 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5)  Claim(s) 7-27 is/are allowed.

6)  Claim(s) 1-6 and 28-31 is/are rejected.

7)  Claim(s) \_\_\_\_\_ is/are objected to.

8)  Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

9)  The specification is objected to by the Examiner.

10)  The drawing(s) filed on \_\_\_\_\_ is/are: a)  accepted or b)  objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)  The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a)  All    b)  Some \* c)  None of:  
1.  Certified copies of the priority documents have been received.  
2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1)  Notice of References Cited (PTO-892)  
2)  Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3)  Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.

4)  Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_ .

5)  Notice of Informal Patent Application

6)  Other: \_\_\_\_ .

**DETAILED ACTION**

***Claim Objections***

1. Claims 1-3, 6, 28 and 29 should be objected to because of the following informalities:

Claim 1, at line 7, limitation "the processes" lacks proper antecedent basis. No "processes" was previously recited.

Claims 2 and 28, at line 3, "devices" should be --device--.

Claims 3,6, and 29 at line 4, "devices" should be --device--.

Claim 23, at line 4, "devices" should be --device--.

Claim 6, at line 2, before "using", delete "and".

Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-6, 28, 29 and 31 are rejected under 35 U.S.C. 102(b) as being anticipated by Borden et al. (hereinafter "Borden") (US Patent No. 6,049,220).

Regarding claim 1, Borden discloses a test method comprising:

a) obtaining test measurement values on a device at one or more independent variable values [see Borden: col. 18, line 61-col. 19, line 21];

b) calculating a goodness of fit value for a fitted curve between:

(1) said test measurement values; and

(2) the independent variable values [see Borden: col. 18, line 61-col. 19, line 21 and lines 38-50]; and

using said goodness of fit value to monitor processes used to form said device [see Borden: col. 20, line 50-col. 21, line 4; and col. 8, lines 12-32].

Regarding claim 2, Borden discloses wherein step (c) further includes using control limits on the goodness of fit values; using said goodness of fit value to (1) control the processes used to form said device or (2) or screen the device [see Borden: col. 17, lines 52-65 and col. 16, lines 3-20 and lines 49-67].

Regarding claim 3, Borden discloses wherein step (c) further includes using control limits on the goodness of fit values; said control limits established based on a history of goodness of fit values or on device requirements; and using said goodness of fit value to (1) control the process used [see Borden: col. 16, lines 3-20 and lines 49-67].

Regarding claim 4, Borden discloses the goodness of fit value is a correlation coefficient or a standard error measurement [see Borden: col. 18, lines 31-44].

Regarding claim 5, Borden discloses the fitted curve is a least squares fitted straight lines [see Borden: col. 4, lines 44-56].

Regarding claim 6, Borden discloses the test measurement values are resistance or capacitance measurement values, and step (c) further comprises using said goodness of fit value to (1) control the processes used to form said device or (2) screen the device [see Borden: col. 22, lines 59-col. 23, line 13 and col. 20, line 50-col. 21, line 4; and col. 8, lines 12-32].

Regarding claim 28, Borden discloses that step (c) further includes using control limits on the goodness of fit values; said control limits established based on a history of goodness of fit values or on device requirements; and using said goodness of fit value to screen the device [see Borden: col. 16, lines 3-20 and lines 49-67].

Regarding claim 29, Borden discloses that step (c) further includes using control limits on the goodness of fit values; said control limits established based on a history of goodness of fit values or on device requirements; and using said goodness of fit value to detect low defects in the devices [see Borden: col. 9, lines 55-65; col. 17, lines 44-65; and col. 16, lines 3-20].

Regarding claim 31, Borden discloses that the test measurement values are obtained at two of more test conditions on the device [see Borden: col. 2, lines 34-43].

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Borden et al. (hereinafter "Borden") (US Patent No. 6,049,220) in view of Peng et al. (hereinafter "Peng") (US Patent No. 5,787,190).

Regarding claim 30, Borden does not disclose that the test measurement values are obtained on two or more test sites on the device.

Peng teaches that the test measurement values are obtained on two or more test sites on the device [see Peng: col. 3, lines 31-60].

It would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to modify the invention of Borden to include the test measurement values obtained from different test sites, as taught by Peng, to obtain different set of test criteria to semiconductor wafers to produce another representative wafer map such as testing for logic defects on a die during the manufacturing process to generate a representative wafer map illustrating defective die pattern on that semiconductor wafer or performs component tests to verify the electrical test structure on scribe lines [see Peng: col. 3, lines 31-60].

***Allowable Subject Matter***

4. Claims 7-27 are allowed [Please see Office Action mailed on 07/12/2006].

***Response to Arguments***

5. Applicant's arguments filed on October 12, 2006 with respect to claim 1-6 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phuong Huynh whose telephone number is 571-272-2718. The examiner can normally be reached on M-F: 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marc Hoff can be reached on 571-272-2216. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Phuong Huynh  
Examiner  
Art Unit 2857

PH  
April 9, 2007

*Carol S. W. Tsai*  
CAROL S. W. TSAI  
PRIMARY EXAMINER